

MEDICINE LAKE NATIONAL WILDLIFE REFUGE 1962
MEDICINE LAKE, MONTANA

ANNUAL WATER PROGRAM

Spring runoff was extremely limited in 1961 resulting in sub-normal water levels on three of the six regulated impoundments and complete loss of many of the pothole areas in this general region. Operational levels were attained on Medicine Lake proper, Katy's Lake and No. 12. Spring runoff started in mid-March and lasted only a few days.

An estimated 10,600 acre feet of water was impounded on the various refuge units during the period March 15 - 20. Estimated distribution was as follows:

| <u>UNIT</u> | <u>ESTIMATED ACRE-Feet</u> | <u>MAIN WATER SOURCES</u> |
|----------------------|--------------------------------|----------------------------------|
| Medicine Lake Proper | 8,350 | Big Muddy Creek |
| Homestead Unit | 700 | Big Muddy, Sheep and Lost Creeks |
| Unit No. 10 | 1,100 | Cottonwood, Lake and Sand Creeks |
| Unit No. 11 | 250 | Cottonwood, Lake and Sand Creeks |
| Unit No. 12 | 300 | Lake Creek |
| Katy's Lake | - - | Lake Creek |
| | <u>10,600</u> | |

Water levels dropped rapidly through the summer months and were 1.70, 1.69 and 2.24 feet below operational level on No. 4, No. 10 and No. 12, respectively, when the impoundments froze over in November. All other impoundments have been below gauge since September; Katy's Lake has been below gauge since July. Vegetative production of waterfowl food plants and nesting cover was moderately curtailed by lower water levels on several of the impoundments but did not reach serious proportions. Seed production, however, was less than 50% of the production usually attained under normal operational levels. Waterfowl production and migrational use was well under that of 1960 and reflects the serious shortage of water locally as well as on a continental basis. There was little or no waterfowl production in the local pothole areas this year. No botulism was noted and a minor outbreak of algae poisoning was short-lived.

Recommended waterlevels for the various units for 1962 are as follows:

| Impoundment | Present Level | Established | Recommended Level |
|-------------|---------------|-------------------|-------------------|
| | | Operational Level | |
| No. 4 | 1941.30 | 1943.00 | 1943.00 |
| No. 6 | Below gauge | 1937.65 | 1937.65 |
| No. 10 | 1943.31 | 1945.00 | 1945.00 |
| No. 11 | Below gauge | 1952.54 | 1952.54 |
| No. 12 | 1951.76 | 1954.00 | 1954.00 |
| Katy's Lake | Below gauge | 1953.00 | 1953.00 |

Attainment of recommended levels is reasonable assurance, under normal conditions, that adequate supplies of water will be available through the summer and fall to promote growth of desirable vegetation and to encourage waterfowl use. It should not be necessary, or desirable, to make releases from unit to unit to bolster waterlevels. In the event the recommended (operational) waterlevels are not attained, releases should be made as early as possible (Late March) and then only in such quantities as to make the downstream unit(s) functional. This recommendation is based on the high production and waterfowl use records on the upstream units, the possibility of flooding downstream nests with high volume releases during the April-June period, and the possibility of creating the type of water condition under which botulism can flourish. If deemed necessary or desirable, draw-down could be made during late September and October.

Robert C. Watson

April 20, 1962

ANNUAL WATER PROGRAM

Monthly Record of Gauge Readings

IMPOUNDMENTS

| | No. 4 | No. 6 | No. 10 | No. 11 | No. 12 | Katy's Lake |
|-----------------------|---------|---------|---------|---------|---------|----------------|
| Recommended Levels | 1943.00 | 1937.65 | 1945.00 | 1952.54 | 1954.00 | 1953.00 |
| Levels By Month | | | | | | |
| January | Frozen | Frozen | Frozen | Frozen | Frozen | Frozen |
| February | " | " | " | " | " | " |
| March | 1943.20 | 1936.38 | 1943.73 | 1951.10 | 1953.64 | 1954.14 |
| April | 1943.30 | 1936.60 | 1943.97 | 1951.26 | 1953.86 | 1954.28 |
| May | 1942.90 | 1936.64 | 1943.69 | 1951.00 | 1953.58 | 1953.88 |
| June | 1942.62 | 1936.56 | 1943.31 | 1950.62 | 1953.10 | 1953.38 |
| July | 1941.98 | 1936.60 | 1942.73 | 1950.02 | 1952.50 | B.G.* |
| August | 1941.64 | 1935.74 | 1942.33 | B.G. | 1951.94 | B.G. |
| September | 1941.44 | B.G. | 1943.27 | B.G. | 1951.88 | B.G. |
| October | 1941.30 | B.G. | 1943.31 | B.G. | 1951.76 | B.G. |
| November | Frozen | Frozen | Frozen | Frozen | Frozen | Frozen |
| December | " | " | " | " | " | " |

* Below Gauge